

ATTACHMENT FOR CLAIM AMENDMENTS

U.S. Serial No. 09/899,627; Filed: July 5, 2001



The following is a marked up version of the amended claims in which underlines indicate insertions and brackets indicate deletions.

12. (Amended) A method of manufacturing a copper metal interconnection layer comprising the steps of:

(a) forming a barrier layer along a stepped portion over the surface of an interdielectric layer having a recessed region;

(b) forming a copper seed layer on the barrier layer; and

(c) exposing the barrier layer until exposing the surface of the interdielectric layer by chemical mechanical polishing (CMP) using a solution comprising an oxidizing agent, a pH controlling agent, a chelate reagent, and deionized water so that the copper seed layer remains only within the recessed region.

13 (Amended) The method of claim 12, after the step (c), further comprising the steps of:

forming a copper layer on the copper seed layer formed in the recessed region; and

[forming a copper metal interconnection layer by] planarizing the copper layer [projecting above the surface of the interdielectric layer], the copper seed layer [projecting above the surface of the interdielectric layer], and the barrier layer to form a copper metal interconnection layer.

wherein the copper layer, the copper seed layer, and the barrier layer are [projecting] projected in order above the surface of the interdielectric layer, respectively.

METHOD FOR MANUFACTURING COPPER METAL INTERCONNECTION LAYER
USING CHEMICAL MECHANICAL POLISHING

IN THE CLAIMS

Please amend the claims in accordance with the following rewritten claims in clean form. Applicants include herewith an Attachment for Claim Amendments showing a marked up version of each amended claim.

Please cancel claims 1-11 and 27, without prejudice.

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A'
12. (Amended) A method of manufacturing a copper metal interconnection layer comprising the steps of:

- (a) forming a barrier layer along a stepped portion over the surface of an interdielectric layer having a recessed region;
- (b) forming a copper seed layer on the barrier layer; and
- (c) exposing the barrier layer until exposing the surface of the interdielectric layer by chemical mechanical polishing (CMP) using a solution comprising an oxidizing agent, a pH controlling agent, a chelate reagent, and deionized water so that the copper seed layer remains only within the recessed region.

13 (Amended) The method of claim 12, after the step (c), further comprising the steps of:

forming a copper layer on the copper seed layer formed in the recessed region;
and

planarizing the copper layer, the copper seed layer, and the barrier layer to form a copper metal interconnection layer,

wherein the copper layer, the copper seed layer, and the barrier layer are projected in order above the surface of the interdielectric layer, respectively.